THE MAYAN CALENDAR BASE-13 THEORY

Thirteen was used as the base or root number of a series which in turn related to many astronomical cycles, proving their significance to Mayan culture.

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The ancient civilisations of Mesoamerica pose many unsolved mysteries, not the least of which are their calendar and mathematical systems. I began studying the Mayan, Toltec, Olmec and Aztec cultures in the late 1970s and only pierced through the veils of some of the more profound enigmas within recent years.

One of the more pressing and misunderstood mysteries has been the overarching significance of the number 13 to their cosmological and calendrical systems. Westerners have their own ingrained block against understanding the crucial importance of this number in astronomical and even physiological terms. However, the ancients not only grasped its central role they also understood that it could be used as the root of a numeric series that, once unfolded, embodied the prime numbers governing planetary cycles.

I discovered the proposed base-13 series after decades of research into the Mayan-Aztec calendars and realised the potency of the table may well rival that of the famous Fibonacci series, which yields the Golden triangle.

Maya (Mesoamerican) scholars and independent researchers have long known that the numbers 13, 26, 39, 52 and 104 were key to the calendar system. These numbers are found in the first row of table 1 [see next page]. In this presentation I will attempt to show that the number 13 was actually used as the base or root number of a series. Starting with 13 and adding that number to each succeeding sum generates the series.

I will show that the resultant numbers track astronomical cycles, in terms of days, weeks, months, planetary synodic periods, Venus transits, solar eclipse cycles, etc. For example the table contains the number of years in a Venus Round (104), as well as the number of Venus synodic periods in that cycle (65). The number of days in the Mars synodic year is found to be 780 (the 60th number in the series) and the number 78 is the 6th number. The number of days in the 'accounting' and 'lunar/fertility' year(s)—364, is the 28th number and is also the number of years in a specific interval between Venus transits (1518-1882).

It has long been known that the Maya were keen astronomers who had charted the correct number of days in a year to two decimal places and knew the actual synodic periods of Venus and Mars, as well as the solar eclipse cycle. Yet in spite of their nearly exact astronomical knowledge they chose to build a calendar system that was a whole number synthesis of many interwoven cycles and periods.

REPRESENTATION OF SOLAR PERIODS AND PLANET CYCLES

The problems encountered in trying to formulate a composite calendar system are considerable. Astronomical cycles do not fit into whole number counting systems neatly, especially over extended time periods. For example, decimals are used to express the tropical year at 365.2422 days, the lunation at 29.5306 days, or the average synodic period of Venus, which is 583.92 days. This is the case because these numbers, to their decimal place values, reflect the actual time periods.

Nonetheless, knowing the scientific data and trying to use that even in a single, civil (solar) calendar are two different issues that do no necessarily come together. Our own modern calendar must be adjusted every fourth "leap" year to account for the .2422 discrepancy, the additional days that are not in the annual calendar. In four years they add up to a whole day that is added to the calendar.

Now, imagine that it is necessary to represent not just the solar period but the important cycles of the planets and people in an intermeshed set of calendars. Our idea is to bring these cycles into relation with one another and, most importantly like the Maya, into an

Maya Calendar Root and Numerical Progression

System Root			Calendar Round				Venus Round
13	26	39	**52**	65	78	91	**104**
117	130	143	156	169	182	195	208
221	234	247	260	273	286	299	312
325	338	351	**364**	377	390	403	416
429	442	455	468	481	494	507	520
533	546	559	572	585	598	611	624
637	650	663	676	689	702	715	728
741	754	767	780	793	806	819	832
845	858	871	884	897	910	923	936
949	952	965	978	991	1004	1017	1040
1053	1066	1079	1092	1105	1118	1131	1144
1157	1170	1183	1196	1209	1222	1235	1248
1261	1274	1287	1300	1313	1326	1339	1352
1365	1378	1391	1404	1417	1430	1443	1456
1469	1482	1495	1508	1521	1534	1547	1560
1573	1586	1599	1612	1625	1638	1651	1664
1677	1690	1703	1716	1729	1742	1755	1768
1782	1795	1808	1821	1833	1846	1859	1872
1885	1898	1911	1924	1937	1950	1963	1976
1989	2002	2015	2028	2041	2054	2067	2080
2093	2106	2119	2132	2145	2158	2171	2184
2197	2210	2223	2236	2249	2262	2275	2288
2301	2314	2327	2340	2353	2366	2379	2392
2405	2418	2431	2444	2457	2470	2483	2496
2509	2522	2535	2548	2561	2574	2587	2600
Odd	Even	Odd	Even	Odd	Even	Odd	Even
			Renewal Cycle				

Table I. Base-13 (Hart) Series
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interlocking synthesis with our sacred (astrological) calendar of 260 days. The latter, I shall assert, is also a synthesis of various astronomical as well as physiological cycles.

How is it possible to achieve this level of integration and maintain a close approximate relationship to the actual numbers, given the fact that we do not have decimals or fractions? Even if we did use our current values, fractions make any system unwieldy and extremely complicated in terms of creating a practical civil calendar.

The answer is both simple and yet astonishingly sophisticated. A way is found to use additive mathematics to generate a whole number series that contains sums, which are either amazingly accurate representations, or close approximations, of the cycles to be embodied in our composite calendar.

I proceed by proposing that the (Mayan) calendar system was a synthetic construction, a composite that represented a series of practical trade-offs. Yet it is shown by the first four numbers of the top row that each column contains a significant number, i.e., 13 is the figure of numbered days in the sacred calendar and also the number of weeks in each season of a 52-week (Gregorian) year. It is also the number of months in the sacred and lunar calendars.

Now I am going to also propose that there is only one way to create such a system and ensure that it has viability, and that is to establish a core synthetic value; by that I mean a single number that all the other numbers are related to. This cannot be an arbitrary selection. The unit must be found as an integral factor embedded in astronomical cycles, relationships, ratios, and even in the degrees of relative motions of the Sun, Moon, Venus, Mars and Earth. Only one number will work.

I am convinced that the Maya discovered that number and it was 13. Why was the number 13 chosen as the root?

It is very clear from the archaeological evidence that the Mayan (Mesoamerican) civilisation(s) gave central importance to the number 13. They placed 13 heavens above the Earth and had 13 gods carrying the numbered days of the sacred calendar (Tzolkin) that was made up of 13 months, which also had 20 named days. There can be no doubt that the number 13 was the centrepiece of their cosmological and calendar systems.

However, this still raises the question of why? The query must be raised to a scientific level. To begin to answer this question an examination of the astronomical cycles of the Sun, Moon and Venus must be undertaken. These were the prime celestial bodies that the Maya were concerned with though they also tabulated the cycles of Mercury and Mars.

THE SUN

Though it is often stated that the Sun's rotation period is from 25-27 days, in fact that is an average that includes many arbitrary variables. The Sun's rotation period varies with latitude on the Sun since it is composed of gases. Equatorial regions rotate faster than polar regions. The equatorial regions (latitude = 0 degrees) rotate in about 25.6 days. The regions at 60 degrees latitude rotate in about 30.9 days; the polar regions rotate in about 36 days.

From this it can be seen that the number depends upon where the measurement is being taken. Twenty-six days would describe a latitude fairly close to the equator and in fact it is even the number of days at the equatorial latitude rounded off. I think that the Maya were well aware of sunspots (based upon evidence presented in additional papers) and this is how they counted the number

of days of the solar orbit. Authors Adrian Gilbert and Maurice Cottrell made the case for the importance of the number 26 and how it was selected in their book.[1]

Now I suggest that this is one of the main variables, but not the only one, used to establish the root number 13, or half a solar orbit.

They would have measured it using the transit of sunspots across the face of the solar disc. However, the number 13 cannot be fully derived and justified without taking the lunar and Venus cycles into account as well.

I shall here add the following supporting evidence regarding the selection of the number 13:

1. The Sun's orbital lunar motion per mean rotation is 13.14°
2. The mean daily lunar motion is 13.17°.

Any serious student of the Mayan calendar, including scholars, has had to acknowledge that the number 13 plays a key role. Independent researchers, like Charles Johnson and Carl Munck have pointed out this number's significance in numerous analyses of the calendar (and grid) system, yet the underlying reasoning behind its selection has never been clearly identified or articulated.[2] Thus 13 has been considered an unresolved mystery. Its importance has simply been acknowledged and accepted by all students of Mexican antiquities (including me until recent years). After mentioning it, attention is usually shifted to the meaning and import of the 260-day sacred calendar.

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...why?

Mayan scholar J.E. Thompson put it this way, "every astronomical mechanism, just like everything else in Mayan life, had to be related to the 260-day sacred almanac" (Thompson, 1974).

The proposed base-13 series shifts the focus and shows why this number was chosen. It is the one number that all subsequent numbers in the calendar are related to. I would describe it as the prime astronomical number, or the root synthetic number, upon which the composite calendar was constructed. In fact, I could not generate a meaningful series of numbers that have a precise relationship to astronomical values with any other number.

That the resultant numbers fall into place and give either accurate or close approximations of key solar, lunar, and planetary data will become self-evident in the following sections.

THE MOON AND LUNAR CALENDAR

The Moon appears to move completely around the celestial sphere once in about 27.3 days as observed from the Earth, a sidereal month. This period reflects the corresponding orbital period of 27.3 days. The Moon takes 29.5 days to return to the same point on the celestial sphere as referenced to the Sun because of the motion of the Earth around the Sun; a synodic month.

Lunar phases as observed from the Earth are correlated with the synodic month. The mean period between the sidereal and synodic month(s) is about 28 days. The Moon moves in a counterclockwise fashion 13 degrees every night in relation to a fixed reference star. The Maya had a lunar/fertility calendar that was based upon 13 one month cycles that occurred in a 28-day series. That totalled a lunar/fertility year of 364 days, a number that has great significance in the calendar system. It is embedded in the base-13 series as the 28th number.

The base-13 series and fertility calendar (called so because it coincides with the monthly cycle of menstruation) also included a cross-reference to the 260-day Tzolkin cycle since subtracting 260 from 364 = 104. In other words when the Tzolkin cycle was completed, 104 days remained until the accounting and lunar years came full circle. This is a pivotal number in the series as it is the synthesis of the solar, sacred and Venus calendars called the Venus Round, a period of 104 years, also the 8th number in the progression. (Covered in detail in next section.)

Now I find an extremely simple yet sophisticated use of these numbers to bring the solar and lunar years into alignment. The Pyramid of Kukulkan has four stairways leading up to the temple platform. Each has 91 steps = 364. The final step or +1 gives us the days of the solar year; the sum of the steps equal the lunar/fertility cycle as well. I analysed this pyramid in some depth in a previous paper showing that the four sides of the base also equals 364 or the total number of approximate days (91) in each season that comprise a year with the +1 step onto the solar platform.

Thus it is found that the series is a synthesis of different astronomical cycles and interrelationships. It is clear that the Maya were well aware that the +1 relationship of the number 364 included a synthesis of both the solar and lunar calendars. This brings up a central issue. Part of the beauty of this system is its simplicity. The numbers in the table are all additive values based on starting with 13 and adding that quantity to each succeeding sum.

That is an extraordinarily simple operation, which produces profoundly meaningful results. Next, it is found that a second very basic concept was then used to make adjustments, + or -1. To obtain the true value of the solar year they added 1 to the accounting and lunar cycle(s) of 364. That is made clear in the Aztec sunstone and in the Pyramid of Kukulkan and certainly an inferred operation in the base-13 table.

This is by no means the only example of this simple operation found in the table. It comes up with the numbers 104 and 105, the latter being the number of years from one transit of Venus cycle to another. The next or 9th number in the series (117) has a -1 relationship to the number of days in a synodic period of Mercury, 116.

Returning to the central importance of the number 13, the fact that with respect to the background constellations the Moon moves about 13 degrees further east each day is significant. The Quiché Maya still recognise 13 phases of the Moon from the new to full phases. The foregoing indicates that the number was chosen because it embodies an important ratio—between orbital velocities, cycles and distances—found in the solar system. In effect, the number is the operator in mathematical terms, governing the relationships of the terrestrial planets.

However, I do not believe this number was chosen as the root

just for astronomical or mathematical purposes or functions. Twenty-eight days is the average length of time between female menstrual periods; thirteen years is the average age it takes to reach puberty. The lunar calendar was keyed into important physiological rhythms and so it can be inferred that the 260-day calendar was also aimed at an average of the gestation cycle and the orbital phases of Venus as well. The number 13 is a synthetic number as are its multiples 26 and 260, meaning they embody average and exact numbers of many natural rhythms and cycles.

One logical fallacy that has prevented understanding of the number 13 and the astronomical table it generates has been to look for one cycle that it and/or the number 260 represented.

Crucial to deciphering and fully understanding the base-13 series and the way the Maya conceived of their mathematical and calendar systems is to grasp that it is an additive series based on synthesising whole number relationships. That is how the ancients integrated and manipulated their complex calendars without decimals or advanced formulas. They were aware of the precise values of planetary cycles; but those could not be factored into a set of whole numbers that could be easily manipulated and then adjusted into alignment over time.

It is clear that the base-13 series contains the key numbers to use to track and integrate solar, lunar and Venus cycles. It includes the principal numbers of days, weeks, months and years. The number 91 is the 7th in the series. This is the number of approximate days in a season (4 x 91 = 364). Once again the +1 relationship is used to obtain the solar year. Clearly, the Maya were aware that the table was based upon average and vague, yet close approximations of the real numbers, which is the effective way to manage a complex timekeeping system.

That said, we are basically, at least on one level, in the same relationship they were in terms of accuracy of real astronomical numbers versus our calendar numbers. We know the precise values yet our calendar is not exact on an annual accounting basis. So how could a table be better synthesised with such a broad range of astronomical, numerical and other data? It must be kept in mind that calendars serve critical social, civic and religious functions and no civilisation can evolve without accurate timekeeping and management over short and long-range periods.

The Mayan system not only justified the solar and lunar calendar alignments based upon a year of 364 days +1, it configured the lunar calendar on a daily and monthly basis as a series of movements of 13 degrees each. The sacred calendar, as noted above, had a +104-day relationship to the solar (Haab) and lunar calendar as far as the annual cycle of all three. This shows that these are matrix numbers that represent different lengths of time depending on the context. It could be 104 days when the sacred year was compared to the accounting year, or 104 years when the sacred, civil and Venus calendars were synchronised and readjusted every 37,960 days (104 years).

The astronomical eclipse year is 173.3 days. This period of time is the interval between half eclipse half years. It just so happens that three of these eclipse half-years equal two Tzolkin cycles: (173.3 x 3) = (260 x 2) = 520 days. The number 520 is the 40th number in the series.

Here note that the importance of the number 364 is confirmed in the Codex Borgia and on the Aztec sunstone. The number of calendar pictures on the first four double pages of the Codex equals 364 when the top and bottom borders (104 pictures) are included in the count. They are obviously part of the calendar—this is confirmed by using independent astronomical data—but it is important to this argument to establish that all of these numbers were known and used by the ancients. On each double page there are 91 picture frames which when multiplied by four equals 364.

This number of days is exactly the same as in the calendar of stones shown in the pictographs. Here it can be confirmed that the numbers found in the table were understood and factored into the calendar by the Aztecs (Maya). I propose that the 'accounting' year was really the matrix number that the combined calendars were fixed on and correlated to annually. There was also another much longer accounting period comprised of 1508 years—that number is in the same column as 52 and 364 down 15 rows.

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These numbers are clearly identified in the base-13 table and embedded in the solar and lunar systems and in the pyramid of Kukulkan. They are all multiples of the root number.

Even in terms of our modern calendar the first four numbers in the series are embedded in it: there are four seasons of 13 weeks, 26 is a half-year, 39 weeks is three-quarters of a year and 4 x 13 = 52 weeks.

There is simply no escaping the root-13 value as being the synthesis number when it comes to astronomical cycles.

VENUS

Earth's sister planet is the central planetary relationship that the calendar system revolves around. The choice of the number 104 at the end of the first row of the series may appear to be an arbitrary number but it is not. One hundred and four years coincides with the Calendar Round, which occurred every 52 years. The Calendar Round represented the convergence of the 260 and 365-day calendars. Fifty-two years is 18,980 days, the smallest number divisible by the 260 and 365.

Mayan astronomers knew that the synodic period of Venus was approximately 584 days. The 104-year period encompasses the sacred and solar calendars and since it is 37,960 days, it is the smallest number that is divisible by 260, 365 and 584. The 104-year cycle was called the Venus Round. This period was equivalent to 146 sacred (Tzolkin) cycles and 65 Venus synodic cycles. It has already been established that 65 is the fifth number in the series. Now it is clearly seen that the table encompasses (Earth) years and synodic (Venus) period relationships.

According to independent researcher Robert Peden, "It is conjectured that this coincidence—that 104 years is the natural and optimum time to correct both the solar and Venus calendars—is the basis for the Mesoamerican Calendar Round".[3]

At this juncture, significance is turned to the orbital relationship

between Earth and Venus and the possible reason it was chosen. Imagine the planets are two racehorses running around a track. Venus will pull ahead of the Earth quickly and by the time the latter makes a complete circuit the former will be more than half way toward completing its second lap.

Here the key astronomical and mathematical element of the calendar system is identified—Venus moves 1.62 times faster than the Earth as they spiral around the Sun.

This means that Venus races around the track 13 times to the Earth's eight, producing a 13:8 ratio. Native peoples in Central and North America ascribed the number 13 to Venus and eight to Earth. In essence that is how the Maya reckoned the 104 years in terms of synodic periods, (13 x 8), the structure of the base-13 series. This is a close approximation of the Golden Mean ratio. The series moves from the ratio generated by 13:8 increasingly toward the 1.618 constant.

Why is this ratio a critical value? Phi is actually the mathematical "limit" (rate of change or "slope") for the exponential growth curves that are derived from the Fibonacci series and it is these growth curves that control things like natural spirals, the whorls of pine cones, planetary cycles and even musical scales.

Phi is related to how the universe controls units of growth. It would appear that by placing Venus in a central role as a pivotal cycle and realignment point and linking the sacred and solar calendars to it, the priest-astronomers embedded phi into the calendar.

It has been long accepted that the synodic period of Venus was the key cycle that was used to coordinate and synchronise the Tzolkin and Haab calendars. Almost no attention has been given to the transit of Venus and yet I have found that this cycle was known and considered equally important.

To date the fact that the next transit of Venus occurs in 2012, the end date of the Long Count calendar has not been much appreciated or discussed. Yet this is a fact and it can hardly be considered coincidental given the importance that the Maya themselves placed upon the planet. It cannot be denied that it occupies a central position in the calendar system.

A key historical event proves that the calendar was deliberately configured with the transit of Venus playing a key role. In 1519, in the year One Reed according to the Aztec calendar, Hernan Cortez showed up on the coast of the Yucatan with his band of conquistadors.

Is it an accident that the previous year was the first of a pair of transits, 1518-1526? Hardly, since this is when they looked for Quetzacoatl—to return with a great deal of anxiety. (The Mayan calendar is similarly structured.)

Returning to the table and Venus, the number 364 is found; this time it represents the years between the 1518 and 1882 transits. The 10th number in the series (130) is the number of years separating the 1631-1761 and 1874-2004 transits. Note that 130 is also the number of days in half a sacred 260-day year. There are many more examples of the numbers in the series representing days or years depending upon the context (presented in additional papers).

In addition to the above, the number 13 is the 6th sum in the Fibonacci series, which yields the Golden Mean, 1.618. I believe that this is another reason this number was chosen as the root; and making Venus an integral component of the calendar system embedded the phi ratio at the centre of the calendar.

Further proof of this is found in the 29th number of the base-13 series (377), which is also the 15th number in the Fibonacci series. With 13 at the base and 377 in the series, this demonstrates that the two series are intermeshed.

It has been seen that the numbers in the table represent key ratios and relationships between the Sun, Earth, Moon and Venus with astonishing accuracy. The evidence is solid, even incontrovertible in support of the base-13 theory.

Summary of Evidence and Additional proofs

The base-13 Series has some interesting and unique properties.

1) The rows alternate between odd and even numbers starting with 13 and ending with 104 on the first row.

2) Horizontally across the rows each column increases by 13. Vertically, from top to bottom each row increases by 104, i.e., 13 down the first row to 117, 104 down one to 208. So there is an incremental progression of 13 horizontally and 104 vertically.

3) The first four numbers in the series define the number of weeks in a season, a half-year, three-quarters of a year and a full year respectively. Based upon a seven-day week and 52-week year, 4 x 13 = 52—that is four seasons of 13 weeks each.

4) In terms of the Mayan calendar (Tzolkin), there are 13 numbered days in the sacred 260-day calendar. (The Maya did have a 7-day x 4 = 28 day lunar cycle as well)

5) The solar and sacred calendars aligned in 52 years (Calendar Round), 73 Tzolkin years (18,920 days), the lowest number divisible by 260 and 365. The numbers 52 and 260 are the 4th and 10th numbers in the series.

6) Ninety-one is the 7th number in the series and the approximate number of days in each season.

7) Like 52, the number 104 was pivotal in the Mayan calendar (Venus Round) as it was the number of years it took for the sacred, solar and Venus synodic calendar to align. One hundred and four years is 37,960 days—the lowest number divisible by 260, 365 and 584, the number of days in a synodic period of Venus.

8) The 1,460th number is 18,980 and 37,960 is the 2,920th number in the base-13 series.

9) While 104 years elapse between Venus Rounds, that is equivalent to 65 synodic cycles and 65 is the 5th number in the series.

10) In addition to day, week, seasonal, annual and synodic counts, the series contains key Venus transit data.

11) Successive transits of Venus occur in curious alternating patterns of 105 and 122 years. It is found that the first number is the interval between the 1769 and 1874 transits and the last is the number between the 1882 and 2004 transits.

12) However, on examination of the intervals between the 1874 and 2004 transits, the difference is 130 years, the 10th number in the series which also represents the number of days in half of the sacred year.

13) Now many more relevant numbers are found in the progression. There is a +1 relationship between the 104-year synodic cycle and the 105-year period that separates certain transits, i.e., the 1526–1631 and 1769–1874 transits.

14) There is also a +1 relationship to the number 364—the 28th number is the series and the number of days in a solar year (365). (It is considered 364 is the accounting year and 360 the ideal year.) It is also found that a 364-year interval separates the 1518 and 1882 transits. Additionally, the 18th number in the series (234) also has a +1 relationship to transits since 235 years is a common interval that is found separating the 1526-1761 and 1769-2004 transits.

15) There are 38 thirteen-year periods in 494 years and the solar eclipse occurs 26 times in 494 years. In addition, 494 is the 38th number of the series and the number of years between the 1518 and 2012 transits. (The latter is a crucial cycle.)

16) A day on Venus is equal to 243 Earth days and 243 years separate the 1526 and 1769 transits. There are 365 days in an Earth year and 365 years separate the 1639 and 2004 transits.

17) Why was the number 260 chosen for the Tzolkin? I think that the selection came out of the root-13 progression because it reflects astronomical relationships. The table generates the key numbers of the solar, sacred (Venus) synodic and transit cycles. In the 104-year Venus Round there were 65 synodic periods, that would mean that in 416 years (4 Rounds) there would be 260 synodic cycles of Venus. That would also equate to 584 Tzolkin cycles, curiously the number of days in a Venus synodic period. All of these numbers, except the last one, are found in the table.

18) Multiples of the lunar months were sometimes used for long-range calculations. Comparison of Classical lunar ages in Palenque monuments with the mythological lunar age from the Temple of the Sun suggests that the latter was calculated using the formula 81 Moons = 2,392 days. This gives an average length of the lunar month of 29.53086, accurate to within seven minutes. The 184th number in the base-13 series is 2,392.

19) Twenty-three Venus Round cycles correlates exactly with 2,392 years.

20) Some Mayan inscriptions show a count back to a day that starts a cycle that has a period of 819 days. For example, on Lintels 29 and 30 at Yaxchilán, there is a date 9.13.17.12.10 8 Ok 13 Yax. It then records than on a day 397 days before it (recorded 1.1.17), an 819-day cycle begins on 9.13.16.10.13 1 Ben 1 Ch'en. Each 819-day cycle is part of a larger cycle of 3,276 days when an 819-day cycle again starts with the same colour and direction. The 63rd number in the series is 819.

This would indicate that an age has been completed and a new cycle of solar output will ensue after 2012.

21) There are of course much longer periods in the Mayan calendar system including the sum of the Long Count cycle or period of one Sun, represented as 5,200 years. Since there were five suns in this system, that would equal, on an ideal basis, a Great Cycle of 26,000 years—the precession of the equinoxes equals 25,920 years.

22) A full base-13 read out would end with 26,000. I think that if regressed back through the preceding Sun cycles, the 2012 transit is the culmination of two 13,000-year periods. These would be divided in half, the first in the ice age and the second half in the current interglacial. This would indicate that an age has been completed and a new cycle of solar output will ensue after 2012. That year is the cosmic realignment as author John Major Jenkins has pointed out. Though I do not dispute that theory, I do question the claim that it is the focus of the calendar system, which actually tabulates the cycles and relationships of the Sun, Earth and planets.

About the Author:

Will Hart is a freelance journalist, author, nature photographer and documentary filmmaker. His previous articles on archaeological cover-ups and dissent in science were published in NEXUS 9/03 and 9/04 respectively. His book entitled *The Genesis Race: Our Extraterrestrial DNA and the True Origins of the Species,* (Bear and Company, USA, 2003) was reviewed in NEXUS 11/01.

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